

NORTH ATLANTIC METEOROLOGY.

[Pressure in inches and millimeters; wind-force by Beaufort scale.]

NORMAL CONDITIONS.

The normal barometric pressure for December over the North Atlantic Ocean, as deduced from international simultaneous meteorological observations taken at Greenwich noon and not reduced to standard gravity, is lowest, 29.50 (749), in a narrow oval stretching from southern Greenland over Iceland to North Cape. A similar depression, 29.60 (752), extends from the Alaskan Peninsula west to Kamchatka. Pressure is highest during December, 30.20 (767), over a small oval over the south Atlantic and Gulf States; a similar area of highest pressure, 30.50 (775), extends along the border land between southern Siberia and northern Mongolia at N. 50°.

As compared with November, the mean pressure in December is generally lower over the central portion of the North Atlantic Ocean and thence northward over Greenland, Baffin Bay, and northern Europe. It is higher over the greater part of North America.

The general path of storm centers during December passes from the Japanese Islands northeast over the southern extremity of Kamchatka to the center of the Alaskan Peninsula, where it subdivides, one-half going eastward into British Columbia, the other half southeast into Oregon, from Oregon eastward to the southern border of Newfoundland, thence northeast to N. 55°, W. 15°, where it again subdivides, one-third going southeast to southern Europe and two-thirds northeast to Norway and northern Europe. The region of maximum frequency of storm tracks extends from the Lake region east to Newfoundland, the average being about five per month.

The general velocity of movement of storm centers during December is 36 miles per hour in the United States and 21 miles on the Atlantic Ocean, 24 miles from the Yellow Sea to Kamchatka, and 20 miles over Bering Sea and southward to Oregon.

OCEAN FOG.

The limits of fog belts west of the fortieth meridian, as determined by reports of shipmasters, are shown on Chart I by dotted shading. East of the fifty-fifth meridian fog was reported on 11 dates; between the fifty-fifth and sixty-fifth meridians on 5 dates; and west of the sixty-fifth meridian on 3 dates. Compared with the corresponding months of the last seven years, the dates of occurrence of fog east of the fifty-fifth meridian numbered 7 more than the average; between the fifty-fifth and sixty-fifth meridians, 1 more than the average, and west of the sixty-fifth meridian, 1 less than the average.

OCEAN ICE.

The limits of the region within which field ice or icebergs were reported for December, 1894, are shown on Chart I by crosses.

The easternmost ice (several small bergs, reported on the 9th) was in N. 48° 20', W. 47° 00', and the southernmost ice, a berg about 60 feet high, reported on the 12th, was in N. 45° 22', N. 50° 30'.

In December, 1882, 1883, 1884, 1886, 1888, 1891, and 1892, no Arctic ice was reported near Newfoundland and the Grand Banks. In 1885, several bergs were observed off the Newfoundland coast in the early part of the month. In 1887, a small berg was reported in N. 46° 10', W. 47° 28' on the 26th, and a small berg in N. 48° 20', W. 48° 40' on the 28th. In 1889, large quantities of Arctic ice were reported over and near the Grand Banks. In 1890, a large berg was observed in N. 49° 39', W. 47° 50' on the 13th. In 1893, one small berg was reported in N. 47° 05', W. 50° 43' on the 27th; on the 29th, one large berg was observed in N. 47° 16', W. 49° 36'; on the 31st, in N. 47° 35', W. 49° 00', a berg about 60 feet high was reported.

TEMPERATURE OF THE AIR.

[In degrees Fahrenheit.]

The distribution of the monthly mean temperature of the air over the United States and Canada is shown by the dotted isotherms on Chart II; the lines are drawn over the high irregular surface of the Rocky Mountain plateau, although the temperatures have not been reduced to sea level, and the isotherms, therefore, relate to the average surface of the country occupied by our observers; such isotherms are controlled largely by the local topography, and should be drawn and studied in connection with a contour map.

DIURNAL PERIODICITY.

The regular diurnal period in temperature is shown by the hourly means given in Table V for all stations having self-registers.

NORMAL TEMPERATURE.

In Table II, for voluntary observers, the mean temperature is given for each station, but in Table I, for the regular stations of the Weather Bureau, both the mean temperatures and the departures from the normal are given for the current month. In the latter table the stations are grouped by geographical districts, for each of which is given the average temperature and departure from the normal; the normal for any district or station may be found by adding the departures to the current average when the latter is below the normal and by subtracting when it is above.

DEPARTURES FROM NORMAL TEMPERATURE FOR DECEMBER, 1894.

As compared with the normal for December the mean temperatures for the current month were decidedly in excess in Montana, North and South Dakota, Minnesota, Iowa, and Wisconsin, and northward over Saskatchewan and Manitoba. The stations showing the greatest excess were Winnipeg, 10.4; St. Vincent, 9.8; Moorhead, 9.6; Minnedosa, 9.5; Huron, 8.5; Port Arthur, 8.3; Duluth, 8.2.

Considered by districts, the mean temperatures for the current month show the following departures from normal temperatures:

Positive departures: Middle Atlantic, 0.3; south Atlantic, 0.6; east Gulf, 1.1; west Gulf, 1.7; Ohio Valley and Tennessee, 0.8; lower lakes, 2.2; upper lakes, 4.4; North Dakota (extreme northwest), 8.2; upper Mississippi, 4.6; Missouri Valley, 5.1; northern slope, 1.2; middle slope, 0.4; southern slope (Abilene), 0.9; southern plateau, 0.9.

Negative departures: New England, 0.2; Key West, 0.9; middle plateau, 4.5; northern plateau, 2.0; north Pacific, 2.8; middle Pacific, 2.3; southern Pacific, 0.9.

For certain voluntary stations of rather long periods of observation the normal and extreme mean temperatures and the departures are shown in detail in Table Xa, which is now placed among the meteorological tables instead of being inserted in the text as heretofore.